

# **EPA Comments on Draft Pre-Design Investigation Work Plan Revision 4, Swan Island Basin Project Area Dated June 2021**

**Comments dated August 13, 2021**

The following are the U.S. Environmental Protection Agency's (EPA's) comments on the Draft Pre-Design Investigation Work Plan Revision 4 (PDI WP), prepared by HydroGeologic, Inc. (HGL) on behalf of the Swan Island Basin Remedial Design Group (SIB RD Group) and dated June 2021. The PDI WP is a deliverable prepared for the SIB RD Group under the Administrative Settlement Agreement and Order on Consent (ASAOC), CERCLA Docket No. 10-2021-001, executed between EPA and the SIB RD Group.

## **General Comments on PDI WP:**

1. **Sufficiency Assessment Report Data Gaps:** The PDI WP does not clearly establish that the data gaps identified in the SIB Project Area Draft Sufficiency Assessment Report Revision 4 (SAR) (HGL 2021) will be filled as part of the PDI. A summary of the data gaps should be provided in the PDI WP along with a plan to fill those data gaps. EPA recommends including a crosswalk table to track data needs.

Additionally, clarify if any of the evaluations planned for the PDI are intended to generate inputs for the SEDCAM modeling discussed in the SAR. Additional comments regarding the proposed SEDCAM model will be provided with EPA's comments on the SAR.

2. **SMA Delineation:**

- a. Sediment management area (SMA) refinement needs to consider both surface and subsurface sediment exceedances of all remedial action levels (RALs) applicable outside of the navigation channel and principal threat waste (PTW) thresholds (see Remedial Design [RD] Principle #1 in Section 1.4 of EPA's Remedial Design Guidelines and Considerations [RDGC]).
- b. The intent of the recommendations in the RDGC is to provide a nominal 150-foot grid resulting in a maximum distance of 150 feet between sample locations to delineate an SMA boundary. Note, it is expected that additional samples at higher density may be needed to sufficiently plan for the RD. Adjust the text and proposed sample locations to illustrate that no samples are further than 150 feet apart or provide rationale for why certain proposed sample locations should be spaced farther apart. Note that SMA boundaries will be considered undelineated until they are bounded by samples with no RAL and/or PTW threshold exceedances within a 150-foot grid.

3. **Sediment Sampling** Upon reviewing planned core depths relative to existing subsurface data and RAL/PTW exceedances, EPA believes that the target depth of the proposed subsurface sediment samples should be extended to 15-feet (ft) below mudline (bml) or refusal in most locations. Additionally, 20 feet bml may be required in some locations, particularly those adjacent to historical sample locations with concentrations exceeding RALs at depths greater than 15 feet. EPA recommends collecting additional archive samples from deeper intervals than the depths proposed

in this PDI WP to be analyzed pending characterization of the shallower intervals to avoid unnecessary design schedule delay. This will reduce the potential for data gaps related to unbound depth of contamination (DOC) and lateral extent of contamination. If only subsurface contamination exceeds RALs and/or PTW thresholds and the expected remedial technology application is capping, full delineation of DOC may not be necessary (see RD Principle #4 in Section 1.4 of the RDGC [EPA 2021]). However, characterization of subsurface sediment contamination will be required to sufficiently characterize material to be left in place to support cap design evaluations (see RDGC Table 5-2) or to demonstrate the stability of the buried contamination. If DOC is not fully delineated, EPA will require additional sampling to delineate DOC in dredging areas and areas with non-aqueous phase liquid (NAPL) impacts.

4. **Riverbanks:**

- a. The analytical approach provided for evaluating the historical riverbank samples should be consistent with the Portland Harbor Superfund Site (PHSS) Record of Decision (ROD) (EPA 2017) requirements and EPA's RDGC Appendix D (EPA 2021). The lateral extent of contaminant concentrations exceeding the criteria listed in ROD Table 17 (for riverbank soil) and Table 21 for these historical samples should be evaluated. If historical samples were not analyzed consistent with the ROD and RDGC Appendix D requirements, the evaluation should identify the data gaps.
- b. The riverbank sampling plan should be included in the PDI WP. The text indicates that 150 transects will be, "targeted for visual inspection and possible sample collection." The riverbank sampling plan should include the data quality objectives, planned sampling locations, and sampling methods (including contingency plans).

5. **Data Sources:** Data used in remedial design (RD) deliverables should come from the Portland Harbor Environmental Data Portal. Verify that the sediment data included in the PDIWP was from the datasets provided at the following links or currently in review by EPA (See below). All data not included in the approved or in review data sets should either be removed or be clearly distinguishable on all figures and tables.

- a. RI/FS data (Remedial Investigation Database and Feasibility Study Database): <http://ph-public-data.com/document/CDMSmith2018/>
- b. Pre-RD Investigation and Baseline Sampling data: [http://ph-public-data.com/document/PHRD\\_2019/](http://ph-public-data.com/document/PHRD_2019/)
- c. Pacific Groundwater Group, 2019. Surface and Subsurface Sediment Field Sampling and Data Report, Swan Island Lagoon, Portland Harbor Superfund Site. Prepared for Daimler Trucks North America LLC (DTNA). Data in review by EPA
- d. Pacific Groundwater Group, 2019. Surface and Subsurface Sediment Field Sampling and Data Report, Swan Island Lagoon, Portland Harbor Superfund Site. Prepared for de maximis, inc. Data in review by EPA

6. **Habitat Conditions Data Collection:** EPA appreciates the initiative to collect these data. EPA recommends habitat data be collected to inform the Habitat Equivalency Analysis (HEA) based approach, which enables quantification of pre- and post-remedial habitat conditions to determine potential mitigation requirements, as described in Specific Comments on Section 3.11.

7. **Seepage and Porewater Data:** Empirical methods to measure groundwater seepage should be considered in the current PDI WP or the text should be revised to clarify when such empirical measurements are expected to be completed for cap design (e.g., a subsequent stage of the PDI or the supplemental PDI). Comparative measurements of temperature and specific conductance in sediment porewater and overlying surface water can identify general locations of upwelling but do not provide a quantitative measure of the upwelling rates which can be of the most benefit to this sensitive modeling parameter. Similarly, porewater concentrations for ROD Table 17 contaminants will also be required for cap design so the text should clarify when porewater chemistry data is expected to be collected.
8. **Cap Design Data Needs:** Data and engineering study needs to support cap design are incomplete. Engineering described in the PDI WP to inform cap design are limited to cap physical stability. Clarify how the sampling proposed in the PDI WP is expected to inform chemical isolation layer design requirements for the cap. The PDI WP should more clearly identify data gaps relevant to inform cap design, a cap treatability study (noted in Worksheets #14 and #16 of the QAPP), and any other engineering evaluations needed to support RD. These data gaps should include sampling for site-specific porewater concentrations and groundwater seepage rates in areas where porewater upwelling is measured and/or caps may be required.
9. **Enhanced Natural Recovery (ENR).** The ROD technology application decision tree identifies ENR as the selected technology for areas within the project area that are outside of the sediment management area (SMA). The PDI WP should acknowledge this requirement more clearly and describe what data collection and evaluations will be used to identify areas where MNR may be an effective remedial technology versus areas where ENR would be necessary to achieve CULs. Data gaps relevant to this evaluation should be identified to ensure that the necessary information will be collected as part of the PDI.
10. **Data Quality Objectives (DQOs):** EPA recommends revising the document to follow EPA's 7 step DQO process for each media (EPA, 240/B-06/001, 2006).

#### **Specific Comments on PDI WP:**

1. **Section 1.3 Conceptual Remedial Design Elements, page 1-4:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. Revise the text in this section and subsequently as appropriate to indicate that confirmation of future land uses is a necessary component of data to be collected for each technology and its application.
  - b. The description of the remediation technology application process in each subsection should be revised for consistency with the remedy selection criteria shown in the ROD technology application decision tree (PDI WP Figure 1-3) and the design requirements described in ROD Section 14.2.9. Application of dredging and capping are based on the locations of RAL and PTW exceedances relative to river regions (i.e., shallow, intermediate, etc.).
2. **Section 1.3.1 Sediment Dredging via Future Maintenance Dredging in the Navigation Channel, page 1-5:** This section states that "the entirety of the SIB Project Area is located outside the Federal Navigation Channel and is therefore not subject to the specified future maintenance dredging depths associated with it." This section should be updated to include a discussion of the 50-foot Navigation Channel offset as discussed in Section 5.3.3 of the RDGC, and that the western portion of the site adjacent to the navigation channel is subject to coordination with EPA and USACE to ensure slopes and depths in this area are suitably compatible.

3. **Section 1.6 Important Definitions, page 1-9:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. Cleanup Levels (CULs) – Revise the text to state, “For *riverbank soil* or sediment, when risk based CULs were less than background concentrations for a given contaminant, background concentrations were selected as the CUL (*emphasis added*)”.
  - b. Recontamination Potential Chemicals (RPCs) – The stated approach for identifying RPCs is screening existing surface sediment data against CULs. While the surface sediment screening process/approach may be utilized, it does not remove the need to screen data from all media (e.g., surface sediment, subsurface sediment, groundwater, stormwater, and riverbanks) against ROD criteria to identify sources that may pose a recontamination threat. EPA requests that the identification of RPCs be based on an assessment of all available sediment, riverbank, groundwater, and stormwater data screened against the applicable ROD Table 17 CULs as modified by the 2019 ESD and the 2020 Errata #2 memorandum, and ROD Table 21 RALs and PTW thresholds. The PDI approach should be revised as needed based on review of data from all media.
  - c. Remedial Action Levels (RALs) – Revise text to clarify that the Site-wide RALs in ROD Table 21 apply to the SIB Project Area. Because the Project Area is not in the navigation channel, the Navigation Channel RALs do not apply to SIB SMAs.
4. **Section 2 Existing Conditions Overview, page 2-1:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. Per EPA’s RDGC Section 4.1, the CSM update should include “contaminant characteristics including the nature and extent of contamination for COCs [contaminants of concern] for all relevant media, sources of contamination, and migration pathways” (EPA 2021). Add a summary of these missing CSM elements or a reference to the SAR.
  - b. EPA recommends adding background information about the Willamette River such as the tribal and ecological history and use. The text should acknowledge that the Willamette River is critical habitat for fish, wildlife, aquatic and terrestrial plants, and birds, and supports several endangered salmon runs as stated in ROD Section 1. Revise the text to refer to the archaeological survey conducted during the RI/FS and highlight any areas of interest in SIB.
5. **Section 2.2 Swan Island Basin Conceptual Site Model, page 2-3:** The CSM highlights the quiescent and low energy nature of the lagoon and only discusses vessel traffic in the context of navigational depth requirements. The CSM should also discuss the impacts of vessel traffic on riverbed scour and bank erosion and identify that while the majority of the lagoon is privately owned, there is public access via a beach and boat ramp at the head of the lagoon.
6. **Section 2.2.1 Quiescent Backwater Conditions are Prevalent Withing SIB, page 2-4:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. Revise the text to provide a reference for the statement that flow velocities do not exceed 0.1 feet per second and describe the conditions under which the flow velocities exceed 0.1 feet per second and the associated velocities.

- b. Provide the technical rationale for the assertion that, “the interior of the SIB remains quiescent and does not convey flood flows in contrast to the main river.” Clarify which parts of the Project Area this statement applies to (i.e., inner cove versus the transition zone).
7. **Section 2.2.2 Sediment Deposition and Scour are Limited by Low Energy Hydrodynamics, page 2-4:** Provide a reference or the technical rationale for the statements that deposition is low, and scour is negligible in the Project Area. In addition, discuss deposition and scour due to anthropogenic forces (e.g., propwash from vessel traffic).
8. **Section 2.2.4 Stormwater Outfalls are the Primary Connected Pathway from Upland Sources to SIB Sediments, page 2-4:** Provide robust rationale for the assertion that stormwater outfalls are the “primary connected pathway” or revise the section name.
9. **Section 2.2.5 Dredging History Informs Interpretation and Application of Sediment Characterization Data, pages 2-4 through 2-5:** Clarify whether there was a lack of records for any period in the provided dredging history. Note whether any years where dredging was not noted are due to a lack of data or whether records confirmed no dredging occurred.
10. **Section 3 Data Gaps Analysis, pages 3-1 through 3-8:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. Discuss how the identified data gaps and proposed data collection relate to RD. For example, clarify what RD need(s) the flood impact modeling will serve. Additionally, discuss how the PDI sampling will fill all data gaps associated with the assigned remedial technologies or discuss future plans to fill any remaining data gaps. For example, clarify whether the PDI data will satisfy data needs to evaluate monitored natural recovery (MNR) in the SIB Project Area.
  - b. The data gaps analysis appears to only consider the spatial density of samples and does not discuss whether every sample has results for relevant Table 17 and/or Table 21 contaminants. Include a discussion of any contaminant-specific data gaps in the text.
11. **Section 3.1 Surface/Subsurface Sediment Contaminant Concentrations, pages 3-1 through 3-2:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. The first line of this section states that “*Surface sediment RAL exceedances define SMAs in PHSS.*” This statement is incorrect and must be revised to include both surface and subsurface exceedances. See General Comment regarding SMA Delineation.
  - b. One of the goals listed in this PDI is to delineate the extent of PTW. Locations with PTW exceedances should be highlighted on PDI WP Figure 3 series and Appendix A Figure 4 series and differentiate RAL from PTW exceedances. The sampling plan should clearly illustrate an approach to delineating these locations vertically and horizontally.
12. **Section 3.1.1 Surface Sediment Contaminant Concentrations, page 3-2:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. This section discusses the data density of surface sediment locations and “step out” data referenced to Figure 3-2. This section should be revised after removal or differentiation and qualification of locations on Figure 3-2 that are not part of the approved database. See General Comment regarding Data Sources.

- b. Remove qualitative descriptors like “modest” and “high degree” of coverage and replacing them with a discussion of percentages of areas where samples are not in conformance with the 150-foot sample to sample distance.
  - c. Clarify what is meant by “step out” in the context of the sampling plan. There are no surface grabs indicated on the figures that are listed as step out locations.
- 13. **Section 3.1.2 Subsurface Sediment Contaminant Concentrations, page 3-3:** This section states that “*Conceptually, core locations are identified in each grid cell lacking existing subsurface data by randomly generating x, y coordinates for core collection within each cell.*” SIB RD Group should provide a rationale for why this approach has been selected and how randomly generated locations will achieve the goals of this PDI or RD plans. EPA generally considers targeted, rather than randomized, sample locations the most appropriate for RD-level SMA delineation.
- 14. **Section 3.3 Stormwater Discharge, page 3-4:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. Revise the text in PDI WP Section 3.3 to clarify which outfalls are planned to be sampled as part of the PDI. The following text implies that sampling will occur at private outfall basins: “the collection of additional source control data within city of Portland outfall basins M-1, M-2, M-3, S-1, and S-2, and select private outfall basins...” However, Section 4.3 and Figure 4-2 only describe PDI sampling for the City of Portland outfalls. Appendix A Section 4.5 also indicates that private outfalls will be sampled, and that text should be revised as needed to clarify which private outfalls will be sampled or the process for determining which outfalls will be sampled.
  - b. Revise the last sentence in the section to clarify that uplands source control is DEQ's jurisdiction with coordination and input from EPA on upland contamination which may impact the river. Information on upland source control strategy and DEQ and EPA roles in source control is provided in the *Portland Harbor Joint Source Control Strategy* (JSCS) (DEQ and EPA 2005).
- 15. **Section 3.7 Shoreline and Overwater Structures and Activities, Pages 3-5 through 3-6:** SAR Section 7.4 identifies a need for field reconnaissance to assess “coatings/preservatives used on in-water structures to evaluate the potential significance the piling coatings or treatment processes could have on recontamination potential.” Revise the text to discuss this data gap and provide a plan to fill it.
- 16. **Section 3.11 Habitat Conditions, page 3-7:** Revise the third sentence of the first paragraph to replace “RD” with “RA.”
- 17. **Section 3.11 Habitat Conditions, page 3-7:** The definition of shallow water used by the National Marine Fisheries Service (NMFS) is pertinent to the evaluation of potential impacts on ecological resources, specifically impacts on species listed under the Endangered Species Act. NMFS defines shallow water as 0 to -15 feet Columbia River Datum (CRD). Revise the first sentence of the second paragraph to indicate that habitat conditions characterization data collected for shallow water would include the area from 0 to -15 feet CRD.
- 18. **Section 3.11 Habitat Conditions, pages 3-7 through 3-8:** EPA appreciates the initiative to collect these data. EPA recommends coordination with NMFS as soon as possible to confirm the

appropriate habitat conditions data are collected. Habitat conditions characterization data should include evaluation of the active channel margin (ACM), which NMFS defines as the area between ordinary high water and ordinary low water. Revise the text to clarify that the survey will include areas down to -15 feet CRD rather than “e.g., depth down to 2 meters.” The characterization should also include the riparian area (above ordinary high water) as well as deep water (below ordinary low water) portions of the project area. In addition to the habitat data described in this section of the PDI WP, EPA recommends habitat data be collected to inform the HEA-based approach, which enables quantification of pre- and post-remedial habitat conditions to determine potential mitigation requirements. Habitat data should be collected along transects at a spacing appropriate to fully describe habitat conditions for input into the HEA. Data should include representative photos at a frequency necessary to capture the habitat conditions along each transect. To inform the HEA, habitat data should include the acreages and conditions of each habitat area where remedial activities will occur, including the following: photos on a transect spacing and photo frequency above and below water that will capture all habitat types and variations in quality for items a-e:

- a. Riparian habitat conditions (above ordinary high water and less than 400 feet from the ACM): vegetation, substrate, location with respect to historical floodplain, slope, presence of buildings, structures, and riprap
- b. ACM conditions: slope, vegetation, substrate, presence of riprap, sheetpile/seawall, pilings, suspended structures over channel margins (e.g., docks), and floating structures (e.g., docks)
- c. Shallow water conditions: depth, substrate, presence of riprap, sheetpile/seawall, pilings, and suspended and floating structures
- d. Deep water conditions: depth, substrate, presence of riprap, sheetpile/seawall, pilings, and suspended and floating structures
- e. Off-channel (if present): tributary water temperature and position relative to main channel (e.g., side channel, alcove or slough, embayment [cove]), vegetation, structures, riprap, substrate)

19. **Section 4.1 Surface/Subsurface Sediment Contaminant Concentrations, page 4-1:** The text states, “COCs may be analyzed using archived material, as needed, to characterize the “leave surface” or fill data gaps identified during the RD.” Revise the text to expand the discussion of what conditions would trigger analysis of archived material.

20. **Section 4.2 Porewater Upwelling Location Survey, page 4-2:** EPA has the following comments on this section and the text should be revised accordingly:

- a. The text indicates that the transects shown on Figure 4-1 may be deviated from as needed. Revise the PDI WP to specify under what conditions these deviations may be warranted and discuss the distance or radius within which a station may be relocated. Any deviations from the PDI WP must be reported to EPA via field change request forms for review and approval prior to implementing the proposed change.
- b. Add 2 or 3 transects towards the mouth of the Swan Island Basin in the Dry Dock Basin and Berth 312 area or provide a justification for not including any porewater upwelling transects in this area. Revise Figure 4-1 accordingly.

- c. The timing of the investigation should be planned during the time of the year when the river surface elevations are dropping, has less tidal fluctuations, and seasonal groundwater levels are elevated. The text indicates that regional groundwater elevations were used to determine the period of greatest potential upwelling. The optimal period of upwelling should be determined based on historical river stage and groundwater data as localized to the project area as possible. This period should be clearly identified in the PDI WP for EPA review and approval before starting the survey.
- d. Revise the text to discuss the allowable range of distances between transects and number of stations for each transect shown on Figure 4-1.
- e. Revise the text with the expected temperature differentials needed to detect upwelling between surface water and groundwater.
- f. Revise the text to clearly state the uses of the data being collected. EPA's recommendation is that this data is only suitable to locate quantitative seepage rate collection stations for use in cap modeling.
- g. EPA recommends revising the text to follow EPA's 7 step DQO process EPA, 2006 EPA/240/B-06/001)

**21. Section 4.3 Stormwater Outfall and Conveyance System Sampling, page 4-3:** EPA has the following comments on this section and the text should be revised accordingly:

- a. Clarify the approach for determining whether private outfalls will be sampled and the process that will be used to sample those outfalls. The text is unclear how the private outfall inventory will be used to determine which private outfalls will be sampled. The specific sampling locations and methods for private outfall sampling should be described in the PDI WP or future supplemental PDI work plans to allow for EPA review at least 4 weeks before conducting sampling.
- b. The invert elevations at the proposed sampling locations should be identified to support planning and determining whether backflow will be present in stormwater pipes during selected storms. If alternative sampling locations are selected, those locations should be representative of basin discharges.
- c. The HVS sampling methodology using the Gravity Marine PR2900 system is a time-weighted sampling method and not flow-weighted sampling. Revise the text accordingly.
- d. The rationale for collecting manual grab solids samples should be clarified in the PDI WP. The data use described in Section 4.3 is to "inform the relative RPC load coming from each major sub-basin." Because sediment traps capture time-integrated sediment that is transported through the conveyance system, sediment trap solids data provide stronger assessment of loading than manual grab samples of deposited sediments.
- e. Provide the rationale for the proposed grab sample at manhole AAQ011. It is unclear what RD data purpose sampling at the upgradient part of the drainage basin serves. See also the Editorial Comment on Section 4.3.

**22. Section 4.4 Riverbank Characterization, page 4-4:** EPA has the following comments on this section and the text should be revised accordingly:



- a. This section discusses review of historical data. If historical soil data has been collected on the riverbank, these locations should be added to the PDI figures. Additionally, an assessment of the extent of ROD Table 17 (riverbank soil/sediment) and Table 21 contaminants or gaps in the data sets should be included in a series of figures. This data should be included in either this PDI WP or in final PDI data evaluation.
- b. EPA recommends that Incremental Sampling Methodology (ISM) be considered in the forthcoming riverbank sampling work plan for the sandy beach located at the head of the lagoon where public access is provided via a public boat ramp. If ISM is used, the SAP/QAPP development is to follow the Interstate Technology & Regulatory Council's (ITRC) guidance document, Incremental Sampling Methodology. Technical and Regulatory Guidance (ITRC 2012).

**23. Section 4.5 Bathymetric and Topographic Surveys, page 4-5:** EPA has the following comments on this section and the text should be revised accordingly:

- a. A topographic/bathymetric survey work and quality control plan needs to be submitted. Contents of the plan should include a general discussion of the work to be performed, target river stage, survey timeframe, information on the specific equipment and software to be used, key personnel involved, and discussions about datums, survey control/frequency of monument checks, lead line, velocity and bar check measurements, data acquisition, and data processing. The FSP must also include details appropriate for the bathymetry equipment being used to show how it is compliant with the minimum standards outlined in the U.S. Army Corps of Engineers (USACE) Engineering Manual (EM) 1110-2-1003, Hydrographic Surveying, dated November 30, 2013 See Appendix A of the Pre-RD Group's Bathymetry Survey Field Sampling Plan for an example (AECOM and Geosyntec 2018), available on the Portland Harbor Environmental Data Portal: <http://ph-public-data.com/document/AECOM2020/>
- b. The text states that, "Reasonable approximations will be made in areas where data collection is not feasible (e.g., under vessels)." Revise the text to explicitly state the manner in which such approximations will be made and clarify what efforts will be made around berthing schedules to access areas under vessels.
- c. Provide an FSP following EPA's 7 step DQO process for LiDAR and bathymetry data collection as an attachment to the final PDI WP for EPA review.

**24. Section 4.6 Geotechnical Sampling, 3<sup>rd</sup> bullet, page 4-6:** EPA has the following comments on this section and the text should be revised accordingly:

- a. Clarify whether the organic content of the soils will be measured as part of the laboratory test program.
- b. Add Specific Gravity – ASTM D854 to be consistent with Field Sampling Plan (FSP) Table 4-1.

**25. Section 4.6 Geotechnical Sampling, 2<sup>nd</sup> paragraph, page 4-6:** Verify that the example for "other applicable guidance documents" is Ohio Department of Transportation versus Oregon Department of Transportation.

**26. Section 4.8 Existing Utilities and Debris Identification Surveys, pages 4-7 through 4-8:** The text indicates the use of multi-beam and Table 3-5 describes the use of Mobil Terrestrial LiDAR scans.

Clarify whether side-scan sonar is being proposed in areas where multibeam may not work and specify what conditions would call for side-scan sonar. See also General Comment regarding 7 step DQO preparation.

27. **Section 4.9 Hydrodynamics and Sediment Dynamics Measurements, page 4-8:** Provide the rationale supporting the proposed locations for the bottom-deployed Acoustic Doppler Current Profilers (ADCPs).
28. **Section 4.10 Habitat Conditions Survey, page 4-9:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. Revise this section consistent with EPA comments on Section 3.11 to provide more detail on the habitat conditions data to be collected.
  - b. Provide additional detail for the statement that, “data collection will be conducted in accordance with applicable state and federal guidelines.” Discuss which state and federal guidelines are applicable.
29. **Section 4.11.3 Facility Future Use and RA Impact Evaluation, pages 4-10 through 4-11:** Revise the text to note that future use evaluations should include an estimate of the structures’ remaining design life per ROD Figure 28 Footnote No. 2.
30. **Section 4.11.5 Dredging Study, page 4-11:** Clarify the goals of the geotechnical evaluation bullet on the dredging study. Include any portions of that study (i.e., internal dredge side slopes, slope stability and structural offsets, additional finite element modeling) or any other geotechnical assessments that will be needed to evaluate the dredge design. This section should also identify evaluations for any underground utilities or pipelines that may be in the project area.
31. **Section 4.11.6 Constructability Assessment, Page 4-12:** EPA recommends that the constructability assessment be conducted in coordination with the dredging study and consider all dredging technologies (i.e., mechanical, hydraulic, land-based, and water-based). Additionally, this section should identify any construction monitoring anticipated for seawalls or other structures that may be required as a result of dredging.
32. **Section 4.11.7 Recontamination Potential Evaluation, pages 4-12 through 4-15:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. The text proposes seven recontamination potential analyses. Discuss the RD use these evaluations will serve. For example, clarify whether they are intended to provide a combined contaminant loading estimate for use in the proposed SEDCAM model, i.e., the input of contaminant concentrations in freshly deposited sediment as stated in SAR Section 8.6.
  - b. SAR Section 7.1 states that upstream sediments exceeding CULs could be a source of recontamination; therefore, additional characterization of upstream sediment transport and deposition is needed. The PDI WP proposes sediment sampling in the SIB (Section 4.1) but does not address how sediment data from upstream of the SIB Project Area will be incorporated in the river sediment transport recontamination potential analysis discussed in PDI WP Section 4.11.7. Discuss how upstream sediment data will be incorporated into the modeling analysis (i.e., as a boundary condition or through sediment tracking analysis with sources released from upstream).

33. **Section 4.11.7 Recontamination Potential Evaluation, Upland Pathways – Direct Discharges (Outfalls) Recontamination Potential, page 4-13:** EPA has the following comments on this section and the text should be revised accordingly:
- a. Discuss the proposed sediment-concentration budget and clarify whether this methodology only applies to direct discharges from outfalls or if it also applies to other potential recontamination pathways.
  - b. Clarify if outfall discharges will also have a contaminant concentration evaluation similar to overwater sources pathways.
34. **Section 4.11.7 Recontamination Potential Evaluation, Upland Pathways – Overwater Sources (Particulates) Recontamination Potential, page 4-13:** Explain what data will be used to characterize over-water discharged particulates and what methodology will be used to simulate their deposition.
35. **Section 4.11.7 Recontamination Potential Evaluation, Resuspension/Scour Pathways – Sediment Releases During Dredging bullet, page 4-15:** Resuspension evaluation should compare expected impacts from both hydraulic and mechanical dredging to assist with equipment selection. EPA recommends conducting this in coordination with the dredging study.
36. **Section 4.11.8 Cap Stability Evaluations, Cap Stability Evaluation (Erosion) - Anthropogenic Conditions Post-Remedial Action, page 4-16:** The text proposes to evaluate impacts on cap stability from anthropogenic conditions and lays out tasks focused on bottom velocities. Revise the text to include wave impacts due to maximum wake generated by expected vessel traffic.
37. **Section 4.11.8 Cap Stability Evaluations, Geotechnical Cap Stability page 4-17:** The stability of the cap against the bearing capacity failure mode and filter design should be evaluated in addition to the slope stability failure mode.
38. **Section 4.11.9 Green Remediation Practice Evaluation, page 4-17:** EPA has the following comments on this section and the text should be revised accordingly:
- a. This section should make it clear that the intention of the regional and national EPA guidance is to reduce impacts from *design investigations as well as construction*, e.g., use of alternative fuels in vehicles used for sampling work and construction activities. At a minimum, the following Green Remediation resources should be considered:
    - i. Consideration of Greener Cleanup Activities in the Superfund Cleanup Process (<https://semspub.epa.gov/work/HQ/100000160.pdf>)
    - ii. Green Remediation Best Management Practices: Site Investigation and Environmental Monitoring ([https://clu-in.org/greenremediation/docs/GR\\_Fact\\_Sheet\\_SI&EM.pdf](https://clu-in.org/greenremediation/docs/GR_Fact_Sheet_SI&EM.pdf))
    - iii. Green Remediation Best Management Practices: Clean Fuel & Emission Technologies for Site Cleanup ([https://clu-in.org/greenremediation/docs/Clean\\_FuelEmis\\_GR\\_fact\\_sheet\\_8-31-10.pdf](https://clu-in.org/greenremediation/docs/Clean_FuelEmis_GR_fact_sheet_8-31-10.pdf))

- iv. Green Remediation Best Management Practices: Integrating Renewable Energy into Site Cleanup ([https://clu-in.org/greenremediation/docs/integrating\\_re\\_into\\_site\\_cleanup\\_factsheet.pdf](https://clu-in.org/greenremediation/docs/integrating_re_into_site_cleanup_factsheet.pdf))
  - v. Green Remediation Best Management Practices: Materials and Waste Management ([https://clu-in.org/greenremediation/docs/GR%20BMP%20fact%20sheet\\_materials&waste.pdf](https://clu-in.org/greenremediation/docs/GR%20BMP%20fact%20sheet_materials&waste.pdf))
  - vi. Green Remediation Focus (<https://clu-in.org/greenremediation/dco>)
- b. For the Pre-Design Investigation Report, the Green Remediation Plan should include best management practices that will be implemented during this phase of the project.
  - c. Consistent with the Region 10 policy noted above, in either this section or the next iteration of this document (i.e., the Green Remediation Plan) explain how baseline versus reductions in energy and water usage, particulate emissions, waste generation and handling, and other improvements will be tracked and reported during pre-design investigation activities, remedial design, and construction.
  - d. While EPA Region 10's Clean and Green Policy is cited, the specific aspects of the regional guidance are not explicitly discussed, e.g., Environmental Management System (EMS) aspects, buying office paper with recycled content, using recycled toner cartridges, etc. Include in the text how this regional guidance was considered.
  - e. Revise the text to specify when the Green Remediation Plan will be drafted during the design process for EPA review to ensure elements that apply to RD data gathering activities are applied in a timely fashion.
  - f. The text should address ROD requirements such as minimizing transportation of materials and using rail rather than truck transport to the extent practicable.
39. **Section 4.11.10 Flood Impact Evaluation, page 4-18:** EPA has the following comments on this section and the text should be revised accordingly:
- a. The flood impact evaluation does not require 3D modeling. Delete term "3D" from text in parentheses in the first paragraph of section.
  - b. Revise the text to include a discussion of climate change impacts as another factor to be assessed in the flood impact evaluation. Per the ROD, "uncertainties associated with potential climate change will be incorporated into the flood rise evaluation" (EPA 2017).
40. **Section 5.0 PDI Management Plan, page 5-1:** The following sentence should be appended to note that field work protocols will conform to state and national COVID-19 guidelines: "At all times, this work will adhere to industry prescribed health and safety practices in the field and in the water."
41. **Section 6 Deliverables/Schedule, page 6-1:** Include a table that summarizes the proposed schedule for PDI sampling. The table would provide a quick reference to confirm that sampling is planned for the optimum time (e.g., stormwater/outfall sampling and porewater upwelling surveys), as well as

confirm that sampling is appropriately staged so as not to interfere with the other sampling efforts (e.g., geotechnical sampling and sediment sampling for chemistry and other parameters). EPA understands that a detailed field schedule is not possible at this time but expects that one will be provided in the final PDI WP prior to mobilization.

42. **Section 7.1 Positioning, Horizontal, and Vertical Control, page 7-1:** State the frequency at which the onboard fathometer will be checked with physical (i.e., lead line, pole) checks. Describe how any offsets of a certain value or greater will be accounted for with relevant software.
43. **Section 7.2.1 Positioning at Sediment Sample Stations, page 7-1:** Revise the text to note the fixed survey benchmark being selected. The FSP should describe which monuments will be used and when the position check(s) will be performed. The FSP should verify that these monuments are adequate for the survey to be performed. Provide a table showing primary and secondary monuments and include the monument name, coordinates, and elevation. To relate this project to previously collected data, the monuments should consist of the previously established monuments, to the extent possible. If any of the previous monuments will not be used, justification for using different monuments should be provided. A primary monument should be shot at the beginning and end of the survey, at a minimum. If a monument is not easily accessible during surveying, a new monument should be established as close as possible to the original monument and any deviations should be noted in the final report. Provide all monument elevations in NAVD88 and provide a conversion factor value for any monument elevations that are converted from a different reference elevation. The location of the established monuments to be used for position checks should be shown on a figure.
44. **Table 3-3 Data Gap Analysis – Geotechnical Site Characterization:** The list of engineering analyses under the “Site Specific Geotechnical Design Parameters” data requirement item should also include an evaluation of bearing capacity mode of failure for the cap.
45. **Table 3-4 Data Gap Analysis – Shoreline and Overwater Structures:** Revise the table to include the estimated remaining service life of shoreline and overwater structures as a data requirement.
46. **Table 3-6 Data Gap Analysis – Hydrodynamics and Sediment Dynamics:** A 3D hydrodynamic and sediment transport model is proposed to fill a data gap for currents and water levels. However, being a freshwater tidal system (i.e., lacking salinity and/or thermal stratification) a 2D model will be adequate. Review and revise the proposed modeling approach, as needed. EPA recommends collecting data when water levels are low.
47. **Table 3-6 Data Gap Analysis – Hydrodynamics and Sediment Dynamics:** EPA has the following comments on the table, and it should be revised accordingly:
  - a. The table should be expanded to include data on climate change (as relates to anticipate changes in sea level and river flow rate). Specifically, the ROD states that “uncertainties associated with potential climate change will be incorporated into the flood rise evaluation and cap design elements”. See RDGC Section 5.2.12 for additional guidance (EPA 2021).
  - b. Conceptual fluid design modeling of propeller wash is proposed. The table should be expanded to include EPA guidance (Palermo et al., 1998, RDGC) on incorporating propeller wash impacts on cap design.
48. **Figure 1-2 Technology Assignments, Selected Remedy:** Section 1.1 indicates that Figure 1-2 shows the Project Area technology assignments as depicted in the ROD. However, Figure 1-2 does not match the technology assignments indicated on Figure 31d of the ROD; namely, Figure 1-2 does

not show capping as the assigned technology under Pier A. Revise the figure to address the discrepancy.

49. **Figures 3 Series:** EPA has the following comments on these figures, and they should be revised accordingly:
- Different symbols should be used to differentiate sampling events.
  - The current scale of the figures is too large and lacks data required for EPA or stakeholders to perform a timely review. EPA recommends having an overview figure and then zooming in to locations such that sample ID's can be added to proposed and historical cores.
  - Evaluation of bathymetric data should be included to support sampling decisions. Add contours to the figures and, if needed, the scales should be adjusted.
  - Revise the figures to depict the location, name, and contaminant identified. For additional clarity, include the concentration of the contaminant, depth interval, and indication if that location is vertically delineated with two consecutive 1-foot sampling intervals below applicable RAL or PTW thresholds (see Section 5.1.2 of the RDGC).
  - Add the demarcation of the shallow zone, intermediate zone, approximate top of bank, and approximate future maintenance dredge areas on all figures.
50. **Figures 3-2 and 3-3:** As discussed in the Approved Sample Databases general comment, only samples from approved data sets should be provided on the data gaps assessment figures. Remove or differentiate all non-approved surface and subsurface locations.
51. **Figures 4-3 and 4-5:** Ensure that the bathymetry FSP, once submitted, indicates the target overlap of bathymetry and LiDAR surveys to meet DQOs along with river elevation ranges necessary to achieve each survey successfully.

#### **Editorial Comments on PDI WP:**

- Section 1.6 Important Definitions, Contaminants of Concern (COCs), page 1-9:** The second sentence in the subsection appears to contain a typographical error: "DDX.1." Revise as needed.
- Section 2.2.5 Dredging History Informs Interpretation and Application of Sediment Characterization Data, page 2-4:** This section lists the maintenance dredge events and references figures from the 2004 Programmatic Work Plan. EPA recommends adding boundaries of the historic dredge areas to a figure in the PDI WP or in the data evaluation report to provide additional context for data comparison and relationship to the conceptual site model (CSM).
- Section 3.1.2 Subsurface Sediment Contaminant Concentrations, 2<sup>nd</sup> paragraph, page 3-3:** The last sentence of this paragraph is repeated. Remove one of the duplicate sentences.
- Section 3.3 Stormwater Discharge, page 3-4:** The following text appears to have a typographical error: "CLs and/or RALs". Revise to state, "CULs and/or RALs".
- Section 4.3 Stormwater Outfall and Conveyance System Sampling, page 4-4, bullet 3:** The text in bullet three indicates that a grab solids sample will be collected from AAQ011, whereas Figure 2 indicates the sample will be collected at AAQ012. Revise as needed so that text and figures are consistent.

6. **Section 7 References, pages 7-1 through 7-1:** Add the following citations to the reference section:
- a. PGG (Pacific Groundwater Group). 2019a. Surface and Subsurface Sediment Field Sampling and Data Report, Swan Island Lagoon, Portland Harbor Superfund Site. Prepared for Daimler Trucks North America LLC.
  - b. PGG. 2019b. Surface and Subsurface Sediment Field Sampling and Data Report, Swan Island Lagoon, Portland Harbor Superfund Site. Prepared for de maximis, inc.
7. **Figure 3-3:** Revise the legend to clarify which locations represent surface samples, subsurface samples, or both.

## References

DEQ and EPA. 2005. *Portland Harbor Joint Source Control Strategy*.

EPA. 2017. *Record of Decision, Portland Harbor Superfund Site, Portland, Oregon*. Prepared by EPA Region 10.

EPA. 2020. *Remedial Design Guidelines and Considerations*. Portland Harbor Superfund Site, Portland, Oregon. February 28, 2020.

IRTC. 2009. *Incremental Sampling Methodology*. Washington, DC.

Palermo, MR, JE Clausner, MP Rollings, GL Williams, TE Myers, TJ Fredette and RE Randall. 1998. *Guidance for subaqueous dredged material capping, Technical Report DOER-1*, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

# EPA Comments on Appendix A FSP of the Draft Pre-Design Investigation Work Plan, Swan Island Basin Project Area, Dated June 2021

Following are EPA's comments on the HydroGeoLogic, Inc. Field Sampling Plan (FSP), Appendix A of the Draft Pre-Design Investigation Work Plan, prepared by HydroGeoLogic, Inc. on behalf of the Swan Island Basin Remedial Design Group and dated June 2021.

## General Comments on FSP:

1. **Phase 2 Analysis of Archived Subsurface and Surface Intervals:** Tables 4-2 and 4-3 indicate samples will be archived for Phase 2 and that the FSP will provide more detail. Discussion of Phase 2 analysis is missing from the FSP and must be added. The FSP should include details such as when archived samples will be analyzed and how to analyze those samples. Additionally, EPA recommends review of adjacent historical sample locations to determine subsurface intervals for Phase 1 sample analysis. As noted in PDI WP General Comment on Sediment Sampling, historical locations were found to have concentrations above RALs at depths greater than 15 feet.
2. **Riverbank Sample Locations:** Chemical characterization of riverbank soils should be conducted throughout the bank between mean low water (MLW) and the top of the bank, as described in Section 2.2.1 of RDGC Appendix D. The proposed sampling locations do not provide coverage of the MLW zone of the riverbank and samples should be added to capture that part of the riverbank.

## Specific Comments on FSP:

1. **Section 1.3 Purpose and Objectives, No. 2, page 1-4:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. Revise to clarify what "three applications" the text is referring to.
  - b. Revise the following text for clarity: "Ensure that the data and analysis needs are sufficient to support..." It is not clear how a data/analysis *need* would support RD. Data and analysis support RD after data and analysis *needs* (data gaps) are filled.
2. **Section 4.2 Sediment Sampling, page 4-2:** All ROD Table 21 contaminants should be analyzed, per Section 5.1.2 of EPA's RDGC (EPA 2021) unless a CSM based technical rationale can be provided to limit analysis. EPA acknowledges that the data density and results for chlorobenzene and naphthalene are likely sufficient to support such rationale. Revise the text to provide an explicit explanation that references the data.
3. **Section 4.2.2.2 Surface Sample Collection and Compositing, page 4-5:** The text states that "After sealing the sample containers, the container threads will be thoroughly wiped down before storing on ice in a sampler cooler. This will prevent leakage and potential cross-contamination." The order of operations in the first sentence is incorrect and should be corrected. Also, if potential cross-contamination is to be avoided between sample containers stored in a cooler on ice, each jar should be placed in a sealed plastic bag and wrapped in bubble wrap. Revise the text accordingly.
4. **Section 4.2.4 Sediment Erodibility (SedFlume) Sample Collection, page 4-10:** Revise the text to describe the rationale behind the specific locations proposed to be sampled and the number of cores to be characterized for erodibility. Based on experience at other sites, 30 cores over the 117



acre SIB project area is a relatively high density of cores. It is not clear if this density of cores is warranted. Discuss whether there are large variations in sedimentation rates, fines content, energy regimes, consolidation effects, etc. that can affect erodibility in the SIB Project Area.

5. **Section 4.2.2.1.1 Power-Grab Sampling, page 4-3:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. Clarify that power grab samples will be a 3-point composite sample like the manual grab locations. The section does state that a minimum of 3 samples will be collected but does not specify if these locations will be composited.
  - b. The text indicates that if field conditions preclude the field staff from collecting proposed target samples, then the location will be adjusted or abandoned. Revise the text to clarify that adjustment of sample locations outside of the 25-foot radius or abandonment of a sampling location must be documented in a field change request and approved by EPA.
6. **Section 4.2.3.1.1 Core Acceptance Criteria and Contingency Plans, pages 4-6 through 4-7:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. The target recovery should be 80 percent, which is consistent with other sites in Portland Harbor. Revise the text as needed.
  - b. Revise the text to note that, if 80 percent recovery is not achieved, SIB RD Group's representative should contact EPA to discuss potential deviations prior to abandoning a location.
  - c. Revise the text to state that the sample attempts should be made within a 25-foot radius of the target location and that deviations outside this area will require approval by EPA.
  - d. Clarify what is meant by "within +/- 2 ft of target" with regards to penetration depth. The text seems to imply that cores with 8 to 12 feet of penetration bml will be accepted, but it is not clear how the first core acceptance criteria (overlying water is present and the surface is intact) would be met if there is an extra 2 feet of sediment in the 10-foot core tube.
7. **Section 4.2.3.2 Direct-Push Sampling, page 4-9:** Clarify whether direct-push sampling will achieve the data quality objectives for RD. At least a 5-foot sample is needed to apply the ROD technology application decision tree, and the PDI WP estimates that a 10-foot core would be needed to vertically delineate impacts. Describe what measures will be taken if direct-push samples are unable to vertically delineate the depth of contamination.
8. **Section 4.2.5 Dredge Elutriate Testing, pages 4-10 through 4-11:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. It is unclear why dredge elutriate testing (DRET) samples will be collected in accordance with Standard Operating Procedure (SOP) A-4 Storm Drain Sampling (Appendix A). Using a grab sample pole fitted with a sample cup or stainless beaker may not provide adequate sediment volume for the required testing and also limits DRET sample collection to surface sediment. This is also inconsistent with Section 4.2.5.3 text which states that: "A second vibracore will be collected at select locations to perform bulk sediment testing including: waste characterization, DRET, and bench tests for stabilization and handling to support RD." The vibracore samples should be used for bulk

sediment waste characterization and DRET samples instead of the sampling methodology described in SOP A-4.

- b. Revise the text to clarify how and when the sediment samples for disposal characterization and DRET testing will be collected and analyzed, including details on sample depths, proposed locations, compositing, analysis methods, etc. Locations with highest historical COC concentrations should be targeted for the disposal characterization bulk samples.
  - c. Discuss the basis for determining compliance with disposal facility acceptance criteria and confirm that the proposed analytical methods will adequately meet data gaps related to dredged material disposal.
  - d. Specify the ambient water quality criteria to be used for evaluating DRET results and the conventional parameters that will be tested in addition to bulk chemistry. Also indicate the proposed location and volume of surface water sample collection for the DRET slurries.
  - e. Section 4.2.5.2 references Table 2-2 as showing surface water cleanup levels (CULs). Table 2-2 only shows sediment/riverbank soil CULs. DRET samples should be analyzed for all contaminants with surface water and sediment/riverbank soil CULs per ROD Table 17.
  - f. In addition to the TCLP chemical analysis, Resource Conservation and Recovery Act (RCRA) waste characteristics of ignitability and corrosivity, and any listed waste, should also be analyzed for the disposal characterization bulk sediment samples. As stated in Remedial Investigation Section 3.2.3.1.1, ship building and repair activities in the area could have led to volatile organic compound (VOC) contamination; generator knowledge should be considered to determine whether F002 waste characterization should be conducted.
  - g. Clarify when and how dewatering and stabilizing amendments will be tested if the applicable disposal suitability and water quality criteria are not met.
  - h. Provide a description of bench tests for dredged material stabilization and handling of wastes to support remedial design.
9. **Section 4.3.2 Riverbank Soil Characterization, pages 4-12 through 4-13:** EPA has the following comments on this section and the text should be revised accordingly:
- a. A formal plan for riverbank sampling should be provided. This section states that up to 150 samples may be collected (1 from each transect) but does not indicate a planned location. EPA disagrees with a random approach to riverbank characterization to be determined in the field. A plan should be provided that outlines how SIB RD Group riverbank soils throughout the riverbank between the top of bank and MLW will be characterized. See FSP General Comment on Riverbank Sample Locations.
  - b. EPA expects characterization of riverbank soils for all contaminants listed in RDGC Appendix D Table 1 unless a technical rationale based on the project area CSM can be provided to support the exclusion of certain contaminants listed on Table 1 of the guidance. Revise all applicable sections of the PDI WP and FSP accordingly.

- c. The text states that, if riprap or other surface obstructions are present at a target riverbank soil sample location, the location will be relocated within 50 feet of the target location. Revise the text to clarify that, if such relocation is not possible, sample abandonment will need approval from EPA through a field change request.
10. **Section 4.4.2 Exploratory Borings, pages 4-13 through 4-14:** EPA has the following comments on this section and the text should be revised accordingly:
- a. Explain how mudline elevation at the in-water boring locations will be determined.
  - b. Cite applicable ASTM standard for standard penetration testing.
  - c. Standard penetration test blow counts should also be logged by the field engineer or geologist in addition to the parameters listed.
  - d. Explain how the cone penetration testing results will be used to derive engineering properties for geotechnical analyses.
11. **Section 4.5 Stormwater and Stormwater Solids Sampling, pages 4-15 through 4-21:** EPA has the following comments on this section and the text should be revised accordingly:
- a. Provide the analytical suite for each of the planned sampling methodologies. If the analytes are tabulated elsewhere, provide a reference to that information in Appendix A Section 4.5. EPA recommends that stormwater outfall samples be analyzed for all ROD Table 17 contaminants with surface water CULs, not just recontamination potential chemicals (RPCs).
  - b. Discuss the proposed investigation of private outfalls. PDI WP Section 3.3 states that, “The status of discharges from some of the private outfalls is unknown and will need to be evaluated as part of the PDI to provide information necessary to complete the SAR.” Note which private outfalls are planned to be inspected and the rationale for selecting those outfalls. Clarify what information will be collected as part of this investigation and provide the proposed schedule.
  - c. Clarify the sampling locations, media, and approach for the manual grab sample at the public outfalls discharge point (Item 3 on page 4-15).
12. **Section 4.5.2.1.3 Particulate Phase Concentration, page 4-19:** The final bullet suggests that the RPC concentration is in “picograms to proton masses, which is the same as  $\mu\text{g/kg}$ ”. It is not clear from the equation provided where the proton mass unit comes from or how that is equivalent to micrograms per kilogram ( $\mu\text{g/kg}$ ). Revise the text to clarify.
13. **Section 4.5.3 Automatic Stormwater Sampling Methodology for Private Outfall, page 4-19:** EPA has the following comments on this section and the text should be revised accordingly:
- a. Revise the text to clarify that the sampling storm event criteria are as follows:
    - i. Antecedent dry period of at least 24 hours (as defined by less than 0.1 inches over the previous 24 hours)
    - ii. Minimum predicted rainfall volume of greater than 0.2 inches per event
    - iii. Expected duration of storm event of at least 3 hours

- b. Provide additional information on how the autosamplers will be used to collect samples. It is not clear if the samples will be grab samples or composite, whether the samplers will be programmed to automatically collect samples at a given flow volume/time or if they will be manually actuated, and if there are specific SOPs for the use of autosamplers.
- 14. **Section 4.5.4 Manual Grab Stormwater Solids Sampling Methodology, page 4-19:** Provide additional information explaining what Teledyne ISCO portable samples are, what types of samples they are intended to collect, and how these data compare to HVS data.
- 15. **Section 4.5.4 Manual Grab Stormwater Solids Sampling Methodology, page 4-19 and Section 4.5.5 In-Line Sediment Trap Sampling Methodology, page 4-20:** Insufficient information is provided to justify sieving the solids and only analyzing the fraction that is less than 2 mm. The size class of solids that is mobile is dependent on site-specific hydraulic conditions, and the assumption that materials greater than 2 millimeters (mm) in diameter are not mobile is not supported by data or site-specific analysis. In-line sediment traps are specifically intended to capture mobile solids, so sieving and only analyzing the fraction that is less than 2 mm is not appropriate. All solids collected should be analyzed.
- 16. **Section 4.5.5 In-Line Sediment Trap Sampling Methodology, page 4-20:** Clarify the proposed timing for deployment of in-line sediment traps and collection of samples. The timelines described in Section 4.5.5 are not consistent with the timelines proposed in Section 4.3 of the PDI WP.
- 17. **Section 4.5.6.3 In-Line Sediment Trap Sampling, page 4-21:** Note that all Table 21 contaminants are used to define SMAs (not just focused COCs) and, as such, EPA recommends that analysis of all Table 21 contaminants be prioritized.
- 18. **Section 4.9.1 Hand Sampling Tools, page 4-26:** EPA recommends that it be noted in the field logbook when field equipment are decontaminated; and subsequent sample locations in which that equipment was used should be noted in the field logbook for tracking purposes.
- 19. **Section 4.9.2 Drilling Equipment, page 4-26:** Discuss how drilling equipment will be decontaminated if oily/tar residue is present, similar to the discussion of hand sampling tools. See also Specific Comment on Section 4.9.1 regarding field equipment.
- 20. **Section 5.1 Bathymetry and Topography and Section 5.2 Detection of Existing Buried Utilities and Debris, page 5-1:** FSP Sections 5.1 and 5.2 present general guidelines to complete a geophysical survey to identify potential debris as well as coverage, depth, and thickness of sediment types present within the SIB Project Area. However, the text does not provide a work plan for conducting a geophysical survey.

EPA is amenable to the approach to allow the SIB RD Group to work with potential geophysical subcontractors to develop a scope of work to conduct the geophysical survey, as EPA recognizes that preliminary work to determine and resolve several issues related to geophysical surveying prior to designing work such as soil/sediment/water sub-bottom survey, magnetometer survey and side scan sonar, multi-beam bathymetric survey for infrastructure identification, etc. needs to occur. However, EPA expects a geophysical survey work plan that follows EPA's 7 step DQO process to be provided for agency review. EPA requests 45 days of review time for this work plan prior to the scheduled work.

21. **Section 5.3.2 Dive Inspection of In-Water Structures, pages 5-2 through 5-3:** Dive inspections should include in-water sheet pile bulkheads and not be limited to over-water structures. Dive inspections should not be limited to a maximum of three over-water or in-water structures if additional inspections can be performed to determine a structure's functional use and its estimated remaining design life.
22. **Section 5.4.1 Current Velocities and Water Levels, page 5-5:** The rationale behind the proposed longitudinal and lateral ADCP transects within the SIB project area is not clear. The two longitudinal transects will very likely not show any meaningful trends in currents since the dominant flow direction is oriented in the same direction as the proposed transects. The lateral transects will also not show significant variations in currents due to the relatively small tidal prism of the SIB. Consider eliminating the two longitudinal transects and reduce the number of lateral transects or provide the rationale supporting the selection of transects.
23. **Section 5.4.3 Suspended Sediments, page 5-6:** Revise the text to specify how suspended sediment concentrations will be measured. Based on PDI WP Section 4.9, it seems that turbidity will be measured, with presumably a turbidity- total suspended solids (TSS) correlation to be developed and used to convert the continuous turbidity measurements to continuous estimates of TSS. However, turbidity measurements are typically made at a single point in the vertical (in the water column) and therefore cannot be used to characterize the depth-average TSS or the depth-integrated suspended sediment flux. Revise the text to clarify the analytical methods proposed (measure turbidity, or acoustic backscatter using the ADCP), the depth intervals proposed to be sampled, and the procedures to be used to estimate TSS time-series.
24. **Section 5.5 Porewater Upwelling Location Survey, page 5-6:** EPA has the following comments on this section and the text should be revised accordingly:
- a. The period of greatest upwelling identified in this section is July and August which is different from the June and July timeframe identified in PDI WP Section 4.2. Revise the text to address Specific Comment on PDI WP Section 4.2 and resolve the inconsistency between the timeframe suggested in the PDI WP and FSP to ensure that the DQO is met of measurement during the time period of greatest upwelling is met.
  - b. The text indicates that a Trident Probe will be used to measure temperature and specific conductance contrast between sediment porewater and overlying surface water. Trident probes can be used to collect porewater samples for chemical analysis and this data is needed for cap design. The PDI WP could be revised to include collection of porewater samples for chemical analysis of ROD Table 17 contaminants. Alternatively, other means of collecting porewater samples should be proposed.
  - c. Provide a SOP for the Trident Probe sampling with the revised PDI WP for EPA review.
  - d. FSP Section 5.5 and Figure 5-5 should be revised consistent with EPA comments on PDI WP Section 4.2.
25. **Section 8.1.1 Field Decisions and Documentation, page 8-1:** The following text should be removed: "If the EPA contact or designee cannot be reached in a reasonable time frame, minor modifications to the plan may be made without EPA approval." EPA expects field sampling to be conducted according to an approved WP and FSP. Any deviations from these documents must be reported to EPA via field change requests for review and approval *prior to* implementing the proposed change. EPA will make every effort to provide prompt communication regarding field deviations.

26. **Section 9.5 Laboratory Selection, page 9-3:** Add a bullet noting that laboratories with detection limits below Table 17 CULs and/or Table 21 RALs will be selected to the greatest extent practicable.
27. **Table 2-2 Cleanup Levels for Sediment and Riverbank Soil, Portland Harbor Superfund Site Field Sampling Plan, Swan Island Basin, Portland, Oregon:** Correct the CUL for TCDD to 0.0002 µg/kg.
28. **Table 4-1 Summary of Sample Activities, Numbers, and Analyses:** EPA has the following comments on this section and the text should be revised accordingly:
- a. EPA recommends removing the ASTM reference number in Table 4-1 and instead state ASTM standard number.
  - b. ASTM Standards listed for “Sieve and Hydrometer analysis” are incorrect. Verify and cite the applicable ASTM Standards.
29. **Table 4-2:** Clarify the significance of the sample nomenclature. It is not clear why all but 2 samples end in “Y”.
30. **Table 4-2 and Table 4-3:** The footnotes states, “The other half and remaining undivided cores will be archived for Phase 2. See FSP for more details.” Phase 2 is not mentioned anywhere else in the PDI WP or FSP. Revise this reference and include in the text details regarding Phase 2.
31. **All FSP Figures:** Remove the “Confidential” stamps from the figures.
32. **Figures 4-3 and 4-4:** EPA has the following comments on this section and the text should be revised accordingly:
- a. As discussed in PDI WP General Comment on Data Sources, only samples from approved data sets should be provided on the data gaps assessment figures. Remove or differentiate all non-approved surface and subsurface locations.
  - b. The figure legend states that dark green shading means “SMA sample”. Define and explain that term in the text.
33. **Figure 4-6 Proposed Riverbank Characterization Transects:** Add the MLW elevation contour to Figure 4-6 and adjust the sampling transects to include sampling throughout the riverbank between top of bank and MLW.
34. **Appendix A Standard Operating Procedures, SOP 403.07 Geologic Borehole Logging, Attachment 2, Unified Soil Classification System Table:** Verify the correctness of the equation for the Coefficient of Curvature (Cc) and revise if needed.
35. **Appendix C Waste Management Plan, General Comment:** EPA recommends estimating the quantity of investigation derived waste (IDW) that will be generated because handling/disposal of 55-gallon drums of waste may not be economical. One may consolidate multiple drums into a roll-off bin, then conduct composite sampling. This method proves to be more cost-effective if about 10 or more drums are expected to be generated.
36. **Appendix C Section 3.0 General Waste Management, 3<sup>rd</sup> paragraph, page C-7:** Plan states that phosphate-free detergent bearing liquid wastes will be sampled/analyzed for site contaminants of concern, then discharged to sanitary sewer system if ‘the permit’ allows. One

would need to coordinate such discharges with the local sewer agency. Revise the text to state who that would be. As a recommendation, one might consider other disposal means or consolidating the liquid waste because the cost of the chemical analysis may be higher than alternative disposal methods. Also, there can be weather-dependent factors for City of Portland publicly owned treatment works discharge limitations that may prevent its use.

37. **Appendix C Section 3.1 Containers and Accumulation, page C-8:** EPA has the following comments on this section and the text should be revised accordingly:
- a. The text states that, “The waste accumulation area is identified as the staging area at the Fred Divine Dock ...” Provide a figure showing this location and determine if accidental waste releases in this area could result in releases to the environment. Also, provide a brief description of the construction of the “secondary containment system” area. Consider, among other factors, if accumulation of rainwater in the containment area could be an issue.
  - b. The text states that, “The field crew can use this area to process ...” Revise the text to clarify if this area “will” be used (or not).
38. **Appendix C Section 3.4.5 Nonhazardous Waste Manifest, C-14:** It is not typical/required to use a manifest for non-hazardous waste, although records of the quantity and disposal location for the non-hazardous IDW shipments are necessary and required.
39. **Appendix C Section 4.0 Documentation, page C-17:** EPA has the following comments on this section and the text should be revised accordingly:
- a. The text states that “The locations and quantities of soil reused at the site ...” There appears to be no plan to reuse IDW at the site. Clarify whether there is a plan to reuse IDW. If not, remove this sentence.
  - b. Provide a copy of all documentation declared in this section to EPA.

## **Editorial Comments on FSP**

1. **Section 4.5.4 Manual Grab Stormwater Solids Sampling Methodology, page 4-19:** The text states that, “Standing water in the manhole sump, if present, may be pumped off to simplify solids sample collection.” For clarity, revise the text to state that standing water *will* be pumped off.
2. **Figure 4-1:** The outfall symbols are difficult to distinguish from “Surface Sample Locations (Existing)” symbols. EPA recommends using a different symbol/shape/color for outfalls on the figures.
3. **Figure 4-3:** The color scheme on this figure is difficult to read. Suggest reducing opacity of the following grid colors Existing Surface Sample, SMA Sample, and SMA Boundary Sample. The colors used for Proposed Surface Core Sample Location and Surface Sample Location (Existing) are too similar, which is confusing because purple means both “existing” and “proposed”. Revise all other figures with similar color schemes.

# EPA Comments on Appendix B QAPP of the Draft Pre-Design Investigation Work Plan, Swan Island Basin Project Area, Dated June 2021

Following are EPA's comments on the HydroGeoLogic, Inc. Quality Assurance Project Plan (QAPP), Appendix B of the Draft Pre-Design Investigation Work Plan, prepared by HydroGeoLogic, Inc. on behalf of the Swan Island Basin Remedial Design Group and dated June 2021.

## General Comments on QAPP:

1. **General:** The QAPP was reviewed versus the requirements in EPA Requirements for Quality Assurance Project Plan: EPA QA/R-5, March 2001, Reissued May 2006; Guidance for Quality Assurance Project Plans: EPA QA/G-5, December 2002, and the Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) manual (EPA 2005) and optimized worksheets (March 2012). Some sections were missing or incomplete, including B10–Data Management [refer to the data management plan in the work plan]; C1–Assessment and Response Actions [missing discussions on the authority and independence of the individual(s) performing the assessments in relation to those being assessed]; and D2– Verification and Validation Methods [missing data validation procedures checklists to be used by the data validator]. Include or expand on these sections in the QAPP, as appropriate. The section on Non-Direct Measurements should identify existing data and data sources, for example, computer databases or literature files, or models that should be accessed and used.
2. **General:** The first references to analysis for total suspended solids (TSS) in the QAPP are in Worksheet #19, Sample Containers, Preservation, and Hold Times and Worksheet #23, Analytical SOP Reference Table. Include TSS in the other analytical worksheets or clarify why TSS analysis is not included on the other worksheets.

## Specific Comments on Appendix B, QAPP:

1. **QAPP Worksheet #1 and 2, Title and Approval Page, page 3:** Revise the worksheet to include Oregon Department of Environmental Quality (ODEQ) and Yakama Nation as stakeholders on.
2. **QAPP Worksheet #3 and #5 and Worksheet #9, pages 4 and 19:** EPA has the following comments on this section and the text should be revised accordingly:
  - a. DEQ personnel are listed in the distribution list as a settling party entity but should be listed as a Support Regulatory Agency. For clarification, the title for Wesley Thomas should be listed as Project Manager.
  - b. Yakama Nation Fisheries is erroneously listed as part of the Five Tribes; Yakama is spelled incorrectly (Yakama, not Yakima); and Laura Shira's email address is wrong; revise to: shil@yakamafish-nsn.gov.
3. **QAPP Worksheet #4, 7 and 8, Project Organization and QAPP Distribution, under EPA Regulatory Program, page 4:** The QAPP approval page is unsigned. A signature is required for all versions of the QAPP submitted to document review and concurrence of the contents. Include the final signed QAPP approval page in the updated document. Include Josie Clark, EPA, as secondary RPM who can be contacted if Madi Novak is unavailable.



4. **QAPP Worksheet #10, Conceptual Site Model, pages 20 through 24:** Revise the worksheet to summarize or reference a description of the SIB Project Area CSM (in the SAR). As written, it focuses on the harborwide CSM.
5. **QAPP Worksheet #11, Project Data Quality Objectives, Develop the Analytical Approach, page 27:** Include a reference to Worksheet #15 in Section 11.5 so the reader can find key analytical approach information such as analytical methods, detection limits, and project action limits (PALs).
6. **QAPP Worksheet #11, Project Data Quality Objectives, Specify Performance or Acceptance Criteria, page 27:** For projects that involve hypothesis testing (e.g., the presence or absence of contamination exceeding some threshold value) for decision-making, the QAPP needs to specify probability limits for decision errors. For estimations and other analytic approaches (e.g., estimating the volume of groundwater or soil potentially requiring remediation), the QAPP needs to state performance criteria (for new data being collected) or acceptance criteria (for existing data being considered for use). Based on the information presented on Worksheet #11, Section 11.6 (Specify Performance and Acceptance Criteria) and 11's reference to the details in analytical Worksheets #12, 15, 28 and 28, it seems that the estimation approach is planned. Specify whether the estimation approach is planned to be used in the updated QAPP.
7. **QAPP Worksheet #12.1 through 12.9, Measurement Performance Criteria, Sensitivity rows, pages 39-60:** The column titled "QC Sample or Measurement Performance Activity" shows the project quantitation limit (PQL) and the column titled "Measurement Performance Criteria" is listed as "Established at or above the low point of calibration curve". The associated footnote #4 says, "This method requirement will only be reviewed to complete definitive (Stage 4) data validation." Since achievement of the remedy will be based on evaluating the data against the selected action levels (e.g., cleanup levels [CULs]), the project's measurement performance criteria should be included on these worksheets. A reference can be made to Worksheet #15s for specific sensitivity requirements.
8. **QAPP Worksheet #14/16, Project Task and Schedule, pages 64-69:** A detailed schedule is included but it focuses on deliverables only and does not include key activities such as data collection and generation of field and analytical data; data assessments and reviews. Include this information in the schedule.
9. **QAPP Worksheet #15.3B, PALs and Laboratory Specific MDLs/PQLs – PAHs in Water by 8270-SIM, page 75:** Seven PAHs (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]perylene) are focused contaminants of concern (COCs); have PHSS screening levels; they have surface water CULs that are below both ALS-Kelso laboratory method detection limits (MDLs) and PQLs. Note in the revised QAPP if these MDLs/PQLs will achieve the project-specific objectives or if method modifications or other approaches will be applied to improve analytical sensitivities or to evaluate the data. The laboratory should be contacted and the planned approach on achieving the project's quality objective should be included in this section of the QAPP to update the current language.
10. **QAPP Worksheet #15.8A, PALs and Laboratory Specific MDLs/PQL-Organochlorine Pesticides in Soil/Sediment by Method 1699M, page 90:** Dieldrin has a soil/sediment CUL that is below the ALS-Kelso laboratory MDL and PQL. Address as noted in QAPP specific comment number 5.

11. **QAPP Worksheet #15.8B, PALs and Laboratory Specific MDLs/PQL-Organochlorine Pesticides in Water by Method 1699M, page 91:** The DDx components are both COCs and recontaminant potential chemicals (RPCs); they have surface water CULs that are below the ALS-Kelso laboratory MDLs and PQLs. Address as noted in QAPP specific comment number 5.
12. **QAPP Worksheet #15.9A, PALs and Laboratory Specific MDLs/PQL-PCDDs/PCDFs in Soil/Sediment by Method 1613B, page 92:** Four dioxins listed, including 2,3,7,8-TCDD, 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF, and 1,2,3,4,7,8-HxCDF, are both COCs and RPCs and have soil/sediment CULs that are below the CFA laboratory MDLs. Address as noted in QAPP specific comment number 5.
13. **QAPP Worksheet #15.10A, PALs and Laboratory Specific MDLs/PQL-Metals in Soil/Sediment by Method 6020B, page 94:** Arsenic has a soil/sediment CUL that is below the ARI laboratory MDL and PQL. Address as noted in QAPP specific comment number 5.
14. **QAPP Worksheet #19 and 30.2, Project Laboratory Identification, page 109:** Add the laboratories' certification expiration date.
15. **QAPP Worksheet #20, Field QC Summary, Introductory text, page 110:** The fourth sentence says, "No sampling for volatile constituents is planned and TBs and ambient blanks are not required." Aqueous VOCs are indicated on other QAPP worksheets. For example, on Worksheet #15.1 (page 102), ethylbenzene is listed for surface water samples, and on Worksheet #19 and 30.1 (Continued) (page 104), DRET extracts are listed for VOC analysis. Worksheet #20 also lists VOC quality control trip and field blanks on page 111. Clarify or delete the statement quoted in this comment.
16. **QAPP Worksheet #37, Data Usability Assessment, 2<sup>nd</sup> paragraph, page 153:** Describe the circumstances under which data would be rejected and removed from the final data set; how limitations in the final data set will be documented and communicated to all end data users and stakeholders; and the data usability assessment process that will be used to confirm that the data are usable are adequate to make the site decisions.
17. **QAPP Appendix A.1, ALS Environmental-Kelso Laboratory Information, pdf page 697:** This appendix contains an SOP titled, "*Extraction Method for Organotins in Sediment, water and Tissue*". This SOP, document ID EXT-OSWT, Rev 12.0, is not listed on Worksheet #23. Add this analytical SOP to Worksheet #23.
18. **QAPP Appendix A.1, ALS Environmental-Kelso Laboratory Information, pdf page 697:** This appendix is missing SOP SVM-8270L, "*Semi-Volatile Organic Compounds by GC/MS Low Level Procedure*." This SOP is listed on Worksheet #23. Add this analytical SOP to Appendix A.1.
19. **QAPP Appendix A.2, Analytical Resources, Inc. (ARI) Laboratory Information, pdf page 1179:** The Analytical Resources, Inc. standard operating procedures (SOPs) listed in Worksheet #23 and the laboratory QA Manual are noted as confidential business information and are not included in this Appendix. The fly sheet notes that the documents are available on request from the ARI point of contact listed in Worksheet #3/5. At a minimum, include the title and signature pages of the SOPs in the appendix.
20. **QAPP Appendix A.3, Cape Fear Analytical Laboratory Information, pdf page 1181:** This appendix is missing SOP CF-OA-E-001, "*Dioxin/Furan/PCB Congener Sample Processing*". The Cape Fear affiliated laboratory is GEL; their SOP GL-GC-E-127 titled, "Modified Elutriate Test"

is also missing from this Appendix A.3. This SOP is listed on Worksheet #23. Add these analytical SOPs to Appendix A.3. The SOP cover and signature pages can be included for proprietary SOPs.

21. **QAPP Appendix A.4, Northwest Testing, Inc. Laboratory Information, pdf page 1371:** The Northwest Testing Inc. SOPs listed in Worksheet #23 and the laboratory QA Manual are noted as confidential business information and are not included in this Appendix. The fly sheet notes that the documents are available on request from the Northwest Testing point of contact listed in Worksheet #3/5. At a minimum include the title and signature pages of the SOPs in the appendix.

# EPA Comments on Appendix C HASP of the Draft Pre-Design Investigation Work Plan, Swan Island Basin Project Area, Dated June 2021

Following are EPA's comments on the HydroGeoLogic, Inc. Health and Safety Plan (HASP), Appendix C of the Draft Pre-Design Investigation Work Plan, prepared by HydroGeoLogic, Inc. on behalf of the Swan Island Basin Remedial Design Group and dated June 2021.

Note that EPA does not approve HASPs but reviews for completeness.

## General Comments on HASP:

1. **Wildfire Smoke:** With more frequent wildfires in Oregon and the West, EPA recommends including a section with wildfire smoke safety protocol in the event of poor air quality from significant airborne PM<sub>2.5</sub> or PM<sub>10</sub>. Procedures could be similar to those promulgated by CalOSHA, which states that actions such as event delaying, location moving, or face mask/respirator wearing be instituted when certain air quality index (AQI) levels are reached. Also, consider adding wildfire smoke hazards to appropriate AHAs.
2. **Incident Reporting:** Plan should include instructions for the employee reporting of injuries or incidents.
3. **Dive Plan:** The HASP indicates that a dive plan will be submitted by the contractor. The dive plan must be submitted to EPA for review and approval at least 45 days prior to commencement of dive operations.
4. **Element Compliance:** The HASP has been reviewed for compliance with Occupational Safety and Health Administration's (OSHA's) 29 Code of Federal Regulations (CFR) 1910.120(b)(1)(ii) requirements for elements of a HASP.
5. **COVID-19:** Although COVID-19 protocol is discussed in Appendix G, additional mention and reference should be made elsewhere in the plan – e.g., Section 5.10 Biological Hazards, Section 7.1 Personal Protective Equipment, and/or JHAs. It is currently only referenced in the JHA for Working over Water from Boats and Docks.
6. **Rubber Work Boots:** Revise the HASP to include a requirement for rubberized, steel-toed work boots or leather, steel-toed work boots with disposable covers to be worn when working with contaminated sediment, consistent with other Project Areas at PHSS. This requirement reduces the potential for migration of contaminants sediments off the Site.
7. **AED:** An automated external defibrillator (AED) is required to be onsite, and on vessels and personnel trained in its use before work may start.
8. **Medical Surveillance:** Clearly indicate whether each of the proposed personnel is required to be in chemical/biological surveillance per 29 CFR 1910.120 based on their accumulated exposure days over the past year.

## Specific Comments on HASP:

1. **Waste Characteristics, page 4:** The statement that “wastes are not anticipated to be hazardous” is misleading. On page 2 it states that there are several chemical groups of interest related to

historical releases in the area (e.g., PCBs, DDT, and PAHs), which are known to be hazardous to humans, regardless of their classification by Occupational Safety and Health Administration (OSHA) or its Hazardous Waste Operations and Emergency Response (HAZWOPER) standard. The Contaminants of Interest table beginning page 6 also details the presence of these specific chemicals.

2. **Work Zones, page 4:** The text should state whether work zones will be modified based on sampling results or other means as described in Principle Disposal Methods and Practices for Investigation Derived Waste section directly below. Clarify whether work zone needs based on analytical sample data or other rationale.
3. **Contaminants of Interest, page 8:** The ACGIH TLV and OSHA PEL stated for Aldrin appears to be incorrect and should be listed as 0.25 mg/m<sup>3</sup> (skin) for both.
4. **Stinging Insects, page 11:** Instructions should be given for allergic persons to carry an Epi-pen or equivalent if physician directs and alert team to their allergy.
5. **General Site Rules, page 11:** Heavy, sudden rains are a factor at the project location and precautions/planning elements should be included in this section. For example, raingear can be critical during overwater activities.
6. **Activity Hazard Analysis, page 12:** Answers “Yes” to whether permit-required confined spaces will need to be entered. A confined space program should be referenced and attached that shows project compliance with OSHA’s 29 CFR 1910.146 standard.

If confined spaces are to be entered, the subsequent question (“Does the project require specialized training or competent persons for excavations, fall protection, equipment operators, etc.?”) on the same page should also state that confined space training is required.

7. **Additional Personal Protective Equipment Requirements, page 12:** Safety glasses should be included as standard field equipment. Rubber safety-toe boots (or other material capable of being decontaminated) should be required for personnel working on sediment sampling vessels in addition to shallow water (if waders not required).
8. **Health and Safety Monitoring Equipment and Action Levels, Action Level Guidelines for Photoionization Detector, page 14:** Provide the rationale for an action level of “>10 ppm above background in breathing zone”.
9. **Health and Safety Monitoring Equipment and Action Levels, Response for Combustible Gas Indicator, page 14:** Response discusses use of a photoionization detector (PID) to monitor for VOCs. Is this verbiage in the correct row of the table? It appears instead to correspond to the PID row.
10. **Health and Safety Monitoring and Action Levels Table, page 14:** The text seems to indicate that a combustible gas meter will be used for confined space entries, though the plan did not include guidance language for confined space entries.
11. **Health and Safety Monitoring and Action Levels Table, page 14:** The action levels associated with the use of a dust monitor are not clear and should be revised.
12. **AHA Inspections, Surveys, and Sampling from a Watercraft. page 5 of 5:** The text should state clearly that a personal floatation device (PFD) is to be worn at all times when working over

or near water. The text should also be modified to be more applicable and instructive to the Willamette River.

13. **AHA DPT – Sediment Sampling on Land and Over Water, Slips, trips, and falls Hazard Controls, page 5 of 8:** Where it states fall protection is required when exposed to falls greater than 6 feet, this should state 4 feet to comply with the OSHA 29 CFR 1910 General Industry Fall Protection standard.

#### **Editorial Comments on HASP:**

1. The lack of section numbering makes it difficult to reference or locate specific areas of the HASP. EPA recommends revising the HASP with section numbering for ease of reading.

## EPA Comments on Appendix D ERP of the Draft Pre-Design Investigation Work Plan, Swan Island Basin Project Area, Dated June 2021

Following are EPA's comments on the HydroGeoLogic, Inc. Emergency Response Plan (ERP), Appendix D of the Draft Pre-Design Investigation Work Plan, prepared by HydroGeoLogic, Inc. on behalf of the Swan Island Basin Remedial Design Group and dated June 2021.

### **General Comments on ERP:**

1. **Emergency Medical Treatment and First Aid:** The ERP should more clearly state or reference (e.g., HASP instructions) employee instructions for medical treatment or first aid. This is required in an ERP per OSHA's 29 CFR 1910.120(l)(2)(viii).
2. **Element Compliance:** The ERP has been reviewed for compliance with OSHA's 29 CFR 1910.120(l)(2) requirements for elements of an ERP.

### **Specific Comments on ERP:**

1. **Section 1.1 Purpose and Scope, page 1-1:** Section states that ERP describes actions necessary in event of personnel injury, however content within speaks to rescue and mitigation operations, but not care steps for an injured employee. This information should be provided or referenced if located in the HASP.